

इंटरनेट

मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10255 (1982): Tapered Die-Sinking Cutters with Parallel Shanks [PGD 32: Cutting tools]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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*Indian Standard*

## SPECIFICATION FOR TAPERED DIE-SINKING CUTTERS WITH PARALLEL SHANKS

**1. Scope** — Covers the dimensions and requirements for tapered die-sinking cutters with plain parallel shank and parallel flatted shank. This standard applies to both flat-end cutters and ball-nosed cutters.

**2. Types** — Shall be of following types:

- Type A — Short cutters with flat-end
- Type B — Medium cutters with flat-end
- Type C — Long cutters with flat-end
- Type D — Short cutters with ball-nosed end
- Type E — Medium cutters with ball-nosed end
- Type F — Long cutters with ball-nosed end

**3. Dimensions** — Shall be as given in Tables 1, 2 and 3.

### 4. General Requirements

**4.1** For requirements not covered in this standard, it shall conform to the requirements as given in IS : 1830-1982 'Technical supply conditions for milling cutters (second revision)'.  
**4.2** Unless otherwise specified, the cutters shall have RH helicoidal teeth for right hand cutting.

**5. Sampling** — The sampling and criteria of acceptance shall be in accordance with IS : 7778-1975 'Methods for sampling small tools'.

### 6. Designation

**6.1** A tapered die-sinking milling cutter with parallel shank of Type A, having angle  $\alpha/2 = 5^\circ$ , diameter  $d_1 = 16$  mm, tool-type N, made from high speed steel and conforming to this standard, shall be designated as:

Tapered Die-Sinking Cutter A  $5^\circ \times 16$  IS : 10255 HSS

**6.1.1** When a tapered die-sinking milling cutter with parallel shank is required with tool-type other than N, the tool-type H or S, as appropriate shall be added immediately after the size.

*Example:*

A tapered die-sinking milling cutter with parallel shank of Type A having angle  $\alpha/2 = 5^\circ$ , diameter  $d_1 = 16$  mm, tool-type H, made from high speed steel and conforming to this standard, shall be designated as:

Tapered Die-Sinking Cutter A  $5^\circ \times 16$  H IS : 10255 HSS

**6.2** A tapered die-sinking milling cutter with parallel flatted shank of Type B, having angle  $\alpha/2 = 7^\circ$ , diameter  $d_1 = 12$  mm, tool-type N, made from high speed steel and conforming to this standard, shall be designated as:

Tapered Die-Sinking Cutter B  $7^\circ \times 12$  IS : 10255 HSS

**6.2.1** When the tapered die-sinking cutter with parallel flatted shank is required with tool-type other than N, the tool-type H or S, as appropriate, shall be added immediately after the size:

*Example:*

A tapered die-sinking cutter with parallel flatted shank of Type B, having angle  $\alpha/2 = 7^\circ$ , diameter  $d_1 = 12$  mm, tool-type H, made from high speed steel and conforming to this standard shall be designated as:

Tapered Die-Sinking Cutter B  $7^\circ \times 12$  H IS : 10255 HSS

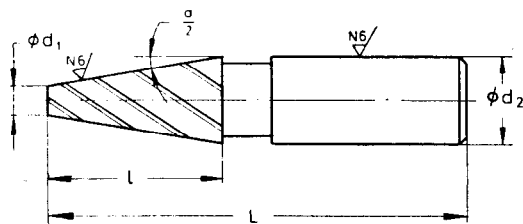
**7. ISI Certification Marking** — Details available with the Indian Standards Institution.

**TABLE 1 DIMENSIONS FOR TAPERED DIE-SINKING SHORT CUTTER  
WITH FLAT-END AND BALL-NOSED END**

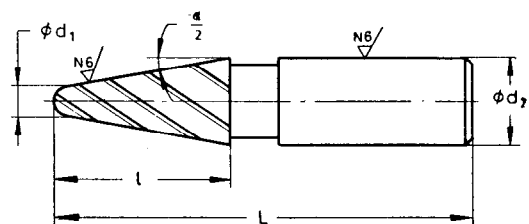
( Clause 3 )

All dimensions in millimetres.

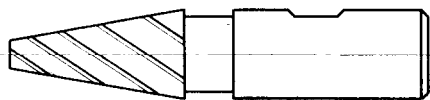
$\nabla \text{N9/} ( \nabla \text{N6/} )$



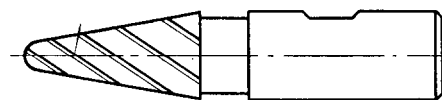
PLAIN PARALLEL SHANK, WITH FLAT-END



PLAIN PARALLEL SHANK, WITH BALL-NOSED END



FLATTED PARALLEL SHANK, WITH FLAT-END



FLATTED PARALLEL SHANK, WITH BALL-NOSED END

$\alpha/2$ $\pm 15'$	$d_1$ k 12	$d_2^*$	$l$	$L$	Tool-Type
10°	(2.5)	12	31.5	85	N, H
	4	16	36	93	
	6	20	42	106	
	8	25	50	120	
	(12)	32	63	135	
5°	(2.5)	10	37.5	85	
	4	10	40	90	
	6	12	40	95	
	8	16	45	103	
	12	20	45	106	
	16	25	50	120	
3°	20	32	63	140	
	(6)	10	40	95	
	8	12	45	105	
	12	16	50	109	
	16	20	56	120	
	20	25	63	135	

**Note**— Non-preferred diameters are given within brackets.

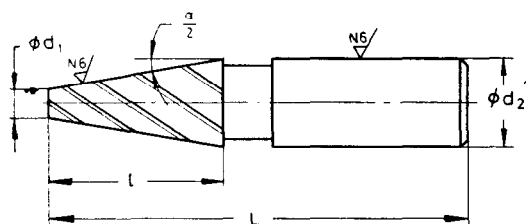
\*Tolerance on  $d_2$  : h8 for plain parallel shank  
h6 for parallel flatted shank

**TABLE 2 DIMENSIONS FOR TAPERED DIE-SINKING MEDIUM CUTTERS  
WITH FLAT-END AND BALL-NOSED END**

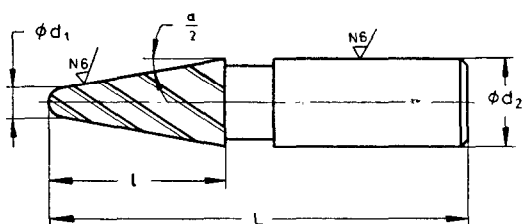
(Clause 3)

All dimensions in millimetres.

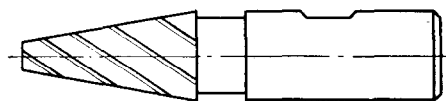
$\nabla \text{N9} / ( \nabla \text{N6} )$



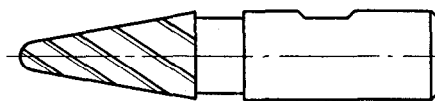
PLAIN PARALLEL SHANK, WITH FLAT-END



PLAIN PARALLEL SHANK, WITH BALL-NOSED END



FLATTED PARALLEL SHANK, WITH FLAT-END



FLATTED PARALLEL SHANK, WITH BALL-NOSED END

$\alpha/2$ $\pm 15'$	$d_1$ k 12	$d_2^*$	$l$	$L$	Tool-Type
10°	4	20	56	120	N, H
	6	25	63	135	
	8	32	71	145	
7°	4	16	50	109	
	6	20	56	120	
	8	20	56	120	
	12	25	63	135	
5°	4	16	63	125	
	6	16	63	125	
	8	20	71	135	
	12	25	71	140	
	16	32	80	155	
	20	32	100	175	
3°	6	10	63	115	
	(8)	16	80	138	
	12	20	80	140	
	16	25	90	160	
	20	25	100	170	

**Note** — Non-preferred diameters are given within brackets.

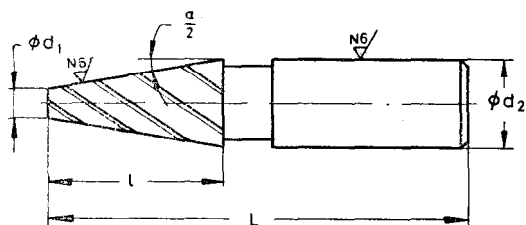
\*Tolerance on  $d_2$ : h8 for plain parallel shank  
h6 for parallel flatted shank

**TABLE 3 DIMENSIONS FOR TAPERED DIE-SINKING LONG CUTTERS WITH FLAT-END AND BALL-NOSED END**

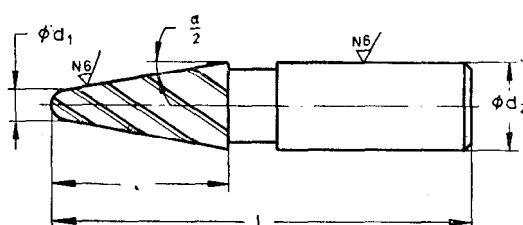
( Clause 3 )

All dimensions in millimetres.

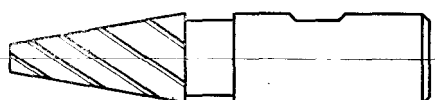
N9/ ( N6/ )



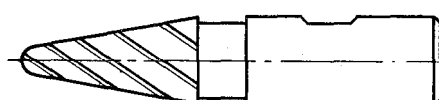
PLAIN PARALLEL SHANK, WITH FLAT-END



PLAIN PARALLEL SHANK, WITH BALL-NOSED END



FLATTED PARALLEL SHANK, WITH FLAT-END



FLATTED PARALLEL SHANK, WITH BALL-NOSED END

$\alpha/2$ $\pm 15'$	$d_1$ k12	$d_2^*$	$l$	$L$	Tool-Type
10°	4	32	90	165	N, H
	(6)	32	102	175	
	(8)	32	112	185	
7°	6	25	90	160	
	8	32	100	175	
	12	32	112	185	
5°	4	20	90	150	
	6	25	100	170	
	8	25	100	170	
	12	32	125	200	
	16	32	125	200	
	(20)	32	160	235	
3°	12	25	130	200	
	16	32	160	235	

**Note** — Non-preferred sizes are given within brackets.

\*Tolerance on  $d_2$  : h8 for plain parallel shanks  
h6 for parallel flatted shanks

**EXPLANATORY NOTE**

The tapered die-sinking cutters are in particular intended for directly obtaining clearances of moulds, patterns and dies, when these exceed  $2^\circ 52'$ . In this standard three types of cutters are standardized namely short, medium and long in conjunction with the useful length  $l$ .

In the preparation of this standard considerable assistance has been derived from ISO 3940-1977 'Tapered die-sinking cutters with parallel shanks', issued by International Organization for Standardization.